

Performance Targets for Advanced Reciprocating Internal Combustion Engines (ARICE)

Parameter	2003	2005	2007	2010
Efficiency				
Brake Thermal Efficiency	>40%	>42%	>45%	>50%
Fuel-to-Electric Efficiency*	>38%	>40%	>43%	>50%
Overall Efficiency (CHP)	>85%	>85%	>86%	>88%
Emissions – shaft power (g/bhp-hr)				
Oxides of Nitrogen (NOx)	<0.15	<0.15	<0.015	≈0.01
Carbon Monoxide (CO)	<1.77	<1.77	<0.02	<0.02
Volatile Organic Compounds (VOCs)	<0.3	<0.3	<0.006	<0.006
Particulate Matter (PM10)	<0.01	<0.01	<0.01	<0.01
Emissions – power generation (lb/MW_ehr)				
Oxides of Nitrogen (NOx)	<0.5	<0.5	<0.05	≈0.03
Carbon Monoxide (CO)	<6.0	<6.0	<0.08	<0.08
Volatile Organic Compounds (VOCs)	<1.0	<1.0	<0.02	<0.02
Particulate Matter (PM10)	<0.03	<0.03	<0.03	<0.03
Cost				
Complete Installed Cost (\$/kW _e)	<800	<750	<700	<600
O&M Cost (\$/kW _e h)	<0.006	<0.005	<0.005	<0.004
Availability & Durability				
Availability	>88%	>90%	>92%	>95%
B10 Durability (hours)	>8,000	>9,000	>10,000	>12,000
Mean Time Between Major Overhaul (hours)	>35,000	>40,000	>45,000	>50,000